

ET Licensee that may result in an otherwise impermissible level of interference to the existing licensee's operations. ET Licensees may also negotiate agreements for relocation of the Existing Licensees' facilities within the 2 GHz band in which all interested parties agree to the relocation of the Existing Licensee's facilities elsewhere within these bands. "All interested parties" includes the incumbent licensee, the emerging technology provider or representative requesting and paying for the relocation, and any emerging technology licensee of the spectrum to which the incumbent's facilities are to be relocated.

(b) Domestic Public Fixed Radio licensees in bands allocated for licensed emerging technology services will maintain primary status in these bands until two years after the Commission commences acceptance of applications for an emerging technology services, and until one year after an emerging technology service licensee initiates negotiations for relocation of the fixed microwave licensee's operations or, in bands allocated for unlicensed emerging technology services, until one year after an emerging technology unlicensed equipment supplier or representative initiates negotiations for relocation of the fixed microwave licensee's operations. When it is necessary for an emerging technology provider or representative of unlicensed device manufacturers to negotiate with a fixed microwave licensee with operations in spectrum adjacent to that of the emerging technology provider, the transition schedule of the entity requesting the move will apply.

(c) The Commission will amend the operating license of the fixed microwave operator to secondary status only if the following requirements are met:

(1) The service applicant, provider, licensee, or representative using an emerging technology guarantees payment of all relocation costs, including all engineering, equipment, site and FCC fees, as well as any reasonable, additional costs that the relocated fixed microwave licensee might incur as a result of operation in another fixed microwave band or migration to another medium;

(2) The emerging technology service entity completes all activities necessary for implementing the replacement facilities, including engineering and cost analysis of the relocation procedure and, if radio facilities are used, identifying and obtaining, on the incumbents' behalf, new microwave frequencies and frequency coordination; and

(3) The emerging technology service entity builds the replacement system and tests it for comparability with the existing 2 GHz system.

(d) The 2 GHz microwave licensee is not required to relocate until the alternative facilities are available to it for a reasonable time to make adjustments, determine comparability, and ensure a seamless handoff.

(e) If within one year after the relocation to new facilities the 2 GHz microwave licensee demonstrates that the new facilities are not comparable to the former facilities, the emerging technology service entity must remedy the defects or pay to relocate the microwave licensee back to its former or equivalent 2 GHz frequencies.

[58 FR 46549, Sept. 2, 1993, as amended at 59 FR 19645, Apr. 25, 1994]

## Subpart C—Technical Standards

### §21.100 Frequencies.

The frequencies available for use in the service covered by this part are listed in subpart K. Assignment of frequencies will be made only in such a manner as to facilitate the rendition of communication service on an interference-free basis in each service area. Unless otherwise indicated, each frequency available for use by stations in this service will be assigned exclusively to a single applicant in any service area. All applicants for, and licensees of, stations in this service shall cooperate in the selection and use of the frequencies assigned in order to minimize interference and thereby obtain the most effective use of the authorized facilities. In the event harmful interference occurs or appears likely to occur between two or more radio systems and such interference cannot be resolved between the licensees thereof, the Commission may, after notice and

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opportunity for hearing, require the licensees to make such changes in operating techniques or equipment as it may deem necessary to avoid such interference.

[61 FR 26675, May 28, 1996]

### § 21.101 Frequency tolerance.

(a) The carrier frequency of each transmitter authorized in these services shall be maintained within the following percentage of the reference frequency except as otherwise provided in paragraph (b) of this section or in the applicable subpart of this part (unless otherwise specified in the instrument of station authorization the reference frequency shall be deemed to be the assigned frequency):

Frequency range (MHz)	Frequency tolerance for fixed stations (percent)
2,150 to 2,162 <sup>1 2</sup> .....	0.001
2,596 to 2,680 <sup>2</sup> .....	0.005

<sup>1</sup>Beginning Aug. 9, 1975, this tolerance will govern the marketing of equipment pursuant to §§ 2.803 and 2.805 of this chapter and the issuance of all authorizations for new radio equipment. Until that date new equipment may be authorized with a frequency tolerance of 0.03 percent in the frequency range 2,200 to 10,500 MHz and equipment so authorized may continue to be used for its life provided that it does not cause interference to the operation of any other licensee. Equipment authorized in the frequency range 2,450 to 10,500 MHz prior to June 23, 1969, at a tolerance of 0.05 percent may continue to be used until February 1, 1976 provided it does not cause interference to the operation of any other licensee.

<sup>2</sup>Beginning January 21, 2000, the equipment authorized to be used at all MDS main stations, and at all MDS booster stations authorized pursuant to § 21.913(b) of this part, shall maintain a frequency tolerance of 0.001%. MDS booster stations authorized pursuant to § 21.913(e) of this part and MDS response stations authorized pursuant to § 21.909 of this part shall employ transmitters with sufficient frequency stability to ensure that the emission is, at all times, within the required emission mask.

(b) As an additional requirement in any band where the Commission makes assignments according to a specified channel plan, provisions shall be made to prevent the emission included within the occupied bandwidth from radiating outside the assigned channel at a level greater than that specified in § 21.106.

[44 FR 60534, Oct. 19, 1979, as amended at 46 FR 23450, Apr. 27, 1981; 48 FR 50329, Nov. 1, 1983; 48 FR 50732, Nov. 3, 1983; 49 FR 37775, Sept. 26, 1984; 54 FR 10327, Mar. 13, 1989; 54 FR 24905, June 12, 1989; 55 FR 46009, Oct. 31, 1990; 56 FR 57816, Nov. 14, 1991; 61 FR 26675, May 28, 1996; 63 FR 65101, Nov. 25, 1998; 64 FR 63730, Nov. 22, 1999]

### §§ 21.102–21.104 [Reserved]

### § 21.105 Bandwidth.

Each authorization issued pursuant to these rules will show, as the emission designator, a symbol representing the class of emission which shall be prefixed by a number specifying the necessary bandwidth. This figure does not necessarily indicate the bandwidth actually occupied by the emission at any instant. In those cases where part 2 of this chapter does not provide a formula for the computation of the necessary bandwidth, the occupied bandwidth may be used in the emission designator.

[49 FR 48700, Dec. 14, 1984]

### § 21.106 Emission limitations.

(a) The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

(1) When using transmissions other than those employing digital modulation techniques:

(i) On any frequency removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 decibels;

(ii) On any frequency removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: At least 35 decibels;

(iii) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least  $43 + 10 \log_{10}$  (mean output power in watts) decibels, or 80 decibels, whichever is the lesser attenuation.

(2) When using transmissions employing digital modulation techniques (see § 21.122(b)) in situations other than those covered by subpart K of this part:

(i) For operating frequencies below 15 GHz, in any 4 kHz band, the center frequency of which is removed from the assigned frequency by more than 50 percent up to and including 250 percent of the authorized bandwidth: As specified by the following equation but in no event less than 50 decibels.